

The Elementary ENGLISH REVIEW

VOL. VII

JUNE 1930

No. 6

Professional Preparation for Teaching Spelling

ANNIE M. McCOWEN

Professor of Elementary Education, State Teachers College, Greeley, Colorado

THIS study is based upon an analysis of the spelling methods courses offered in twenty-three of the twenty-five most outstanding teachers' colleges and normal schools in the United States named in a recent investigation by Mr. Howard McGinnis.¹ Detailed questionnaires regarding these courses were sent to the president of each institution with the request that a questionnaire be filled out by each instructor of a course which dealt in any way with methods of teaching spelling. Fifty replies were received. The following discussion of present practices in conducting spelling methods courses is based upon the results of these fifty questionnaires.

No course dealing exclusively with spelling was reported. The spelling methods in every case form only a part of a more inclusive methods course. Only one institution offers no course which includes any systematic preparation for teaching spelling, but certain spelling problems are taken up in English classes. The titles of the methods courses reported vary widely within the same institution as well as from school to school. They can be roughly classified into the following five groups:

1. Very general courses listed under such titles as "Elementary School Methods."
2. Courses dealing with the teaching of English, as "Oral and Written English."
3. Primary methods courses, such as "Primary Curriculum."
4. Intermediate grade methods courses under such titles as "Teaching in Intermediate Grades."
5. Courses in rural education, such as "Rural School Methods."

The number of class periods devoted exclusively to the teaching of spelling methods varies from one to twenty-four, the median being six.

Very little uniformity exists with regard to the texts used. Almost half of the instructors reported that they did not use a text. The twenty-eight who did use texts as a basis for their spelling work named sixteen different books. The following are texts used by two or more teachers, the figure to the left indicating the frequency of mention:

- 11—Horn, Ernest and Ashbaugh, E. J. LIPPINCOTT'S NEW HORN-ASHBAUGH SPELLER for Grades One to Eight. Lippincott, 1926.

¹McGinnis, H. G. "Outstanding State Teachers Colleges," *Peabody Journal of Education*, September, 1927.

- 3—National Education Association. THE FOURTH YEARBOOK. The Department of Superintendence, 1926.
- 2—Charters, W. W. TEACHING THE COMMON BRANCHES. Houghton Mifflin, 1924.
- 2—Fernald, M. R. TEACHERS' MANUAL FOR SPELLING. State Printing Office, Sacramento, California.
- 2—Tidyman, W. F. THE TEACHING OF SPELLING. World Book Company, 1919.
- 2—Phillips, C. A. MODERN METHODS AND THE ELEMENTARY CURRICULUM. Century, 1923.
- 2—Reed, H. B. PSYCHOLOGY OF ELEMENTARY SCHOOL SUBJECTS. Ginn, 1927.
- 2—Stormzand, M. J. PROGRESSIVE METHODS OF TEACHING. Houghton Mifflin, 1924.

All instructors, except one, require some reference reading of their students. Practically every good available reference on spelling is being used by some one class, but very little uniformity exists in regard to the usage of any one book. Fifty different references were named—twenty-nine of them were mentioned only once, and nine of them twice. The following books were mentioned six or more times, the figure to the left indicating the frequency of use:

- 23—Tidyman, W. F. THE TEACHING OF SPELLING. World Book Company, 1919.
- 14—Horn, Ernest and Ashbaugh, E. J. LIPPINCOTT'S NEW HORN-ASHBAUGH SPELLER. Lippincott, 1926.
- 12—Suzzallo, Henry. THE TEACHING OF SPELLING. Houghton Mifflin, 1913.
- 11—National Society for the Study of Education. EIGHTEENTH YEARBOOK, Part II. Public School Publishing Company, 1920.
- 6—National Education Association. THE THIRD YEARBOOK. The Department of Superintendence, 1925.
- 6—National Education Association. THE FOURTH YEARBOOK. The Department of Superintendence, 1926.

The Elementary English Review and *Midland Schools* are the only magazines named as references.

Demonstration lessons form a regular part of the work in spelling in thirty-four courses, the number of lessons ranging from one to eighteen. The median number of spelling lessons which the students observe before beginning practice teaching is four. College students practice the teaching of spelling on each other in thirteen cases.

All prospective teachers are taught some specific method to use in teaching spelling and many of them are introduced to several different procedures. The particular methods which most prospective teachers are taught to use are as follows, the figure to the left indicating the frequency of use:

- 24—The Horn-Ashbaugh method.
- 6—The test-study or pre-test method, which is probably the same or nearly the same as the Horn-Ashbaugh.
- 2—The Tidyman steps in learning spelling.
- 2—The McCall method. This is a modification of the Horn-Ashbaugh method.

Five instructors have devised special methods of teaching spelling which they train their students to use. These methods all make use of practically the same steps but in different order. Such steps as pronunciation of the word, visualization of the word, vocalization of the word, use of the word in a sentence, and writing the word, are common to all of the different methods, but the sequence of these steps varies with each one. Some of these "special methods" make use of techniques which have been shown to be ineffective, such as group study of words not misspelled by all members of the class and spelling words orally in concert.

Most instructors agree concerning the major content of spelling methods courses. The following are the topics most frequently discussed in such classes, the figure to the left indicating the frequency of use:

- 49—The need for correct spelling
- 50—Aims and objectives in teaching spelling
- 48—How a spelling list should be chosen
- 40—What should determine the grade placement of words in a spelling test
- 47—What method seems best for learning to spell a word
- 41—Efficient methods of class administration of spelling
- 45—What provision should be made for bright pupils who already know how to spell most of the words
- 47—What aid should be given poor spellers who seem unable to keep up with the class
- 45—How to interest children in improving their scores in spelling
- 45—How to test spelling ability of children
- 40—How to provide for the teaching of spelling incident to other school subjects such as compositions, test papers, notebooks, and the like

Twenty-eight other topics were listed, but by only three or fewer instructors.

The writer wishes to make the following comments on present practices of conducting spelling methods courses as revealed by this study:

About one-third of the spelling methods classes are taught by training teachers. The practice of having specific methods courses taught by instructors who teach the same subject matter to pupils is an excellent means of bridging the gap which often exists between theory and practice.

It is evident from some of the replies received that prospective teachers are taught one method of teaching spelling in the methods course and are expected to use another method in practice teaching. Obviously it would be more efficient to have the teacher of methods courses and the supervisor of practice teaching agree on the method to use.

The range of from one to twenty-four in the number of class periods devoted to spelling methods seems unjustifiable. One hour is too short a time in which to treat the subject adequately and one wonders how twenty-four hours can be devoted to

spelling without neglecting some other more important subjects.

No one knows the ideal number of students to have in a class.² The enrollment in the classes reported in this study ranged from nine to one hundred and thirteen. The median enrollment was thirty. This, to the writer, seems a very desirable number to teach.

The instructors of the various classes furnished an excellent list of spelling references and texts. It is regrettable that only about twenty per cent of them make use of the YEARBOOKS of The National Society for the Study of Education and of The Department of Superintendence. The writer firmly believes that all teachers in training should become acquainted with these books. Certainly more use could profitably be made of current magazines as references.

Sixty-eight per cent of the methods classes had from one to eighteen demonstration lessons. In the writer's judgment demonstration lessons should form a part of every methods course. In the case of spelling, however, it seems doubtful if more than two such lessons are needed; one lesson to demonstrate the procedure for testing pupils in spelling and one to show the technique of conducting a study lesson.

Practically all teachers in training are taught some form of the test-study method of teaching spelling. This is in keeping with the results of research in this field.

Teachers should certainly know how to spell the words most commonly used in writing. It is not safe to assume that they already do.³ Tests should be given to determine their spelling ability. Less than half the classes reported in this study were given such tests. Some provision should be made for having prospective teachers learn to spell the words which they miss on such tests.

²Hudelson, Earl. *CLASS SIZE AT THE COLLEGE LEVEL*. University of Minnesota Press, 1928.

³Richardson, E. A. *An Examination of the Spelling Ability of County Normal Students in Ohio*. Master's Thesis, State University of Iowa, July, 1925.

This study shows that the number of student teachers who do practice teaching in spelling varies from zero to one hundred and thirteen, the median being thirty-nine. Since spelling is a basic subject in all elementary schools, it seems advisable that every prospective teacher have the opportunity of doing some practice teaching in it. Administrative difficulties make this impossible in many cases, however. No one knows how much practice teaching is necessary or desirable in spelling; perhaps the amount varies with the ability of the student-teacher. There are so many more important subjects which the prospective teacher should have experience in teaching that it is doubtful if one hundred and twenty-five lessons can be justified. The median number, thirty, seems more than ample. It has been the experience of the writer that young teachers acquire the basic skills in teaching spelling in about three or four weeks of practice teaching.⁴ Such skills as make for very high efficiency in teaching spelling are attained by relatively few teachers of experience. Only expert teachers develop the ability to arouse and maintain the interest of pupils in their progress in spelling to the extent that the class attains a spelling accuracy of ninety-nine per cent and maintains it over a long period.

There is considerable agreement concerning the major content of spelling methods courses. Every instructor includes "Aims and Objectives in Teaching

Spelling" in his course. Twenty per cent omit "Grade Placement of Words" and "Provision for Teaching Spelling Incident to Other School Subjects." The latter topic is a very important one for inexperienced teachers to know.

Some excellent topics are discussed in only a few of the teacher-training classes. "Causes of Misspelling," "Hospital Class for Pupils Below Standard," and "Penmanship Difficulties in Spelling," although they appeared on only one or two questionnaires, are especially commendable. About half the misspellings of pupils can be traced to handwriting difficulties.⁵ Handwriting difficulties are more frequent in primary grades, but they persist into the intermediate grades and even occur in adult misspellings.⁶ In the writer's opinion, other topics mentioned by instructors, such as "The Relation of Spelling to Phonetics," "Attention and Memory Span in Relation to Spelling," "History of Spelling Method" are interesting, but because of the short time given to spelling must necessarily be taught at the expense of more essential points.

Most teacher-training institutions familiarize their students with the results of research in spelling. In many cases, however, the administrative arrangement of training does not seem satisfactory, especially in regard to practice teaching, demonstration lessons, and provision for diagnostic and remedial spelling for prospective teachers.

⁴Book, W. F. and Harter, R. S. "Mistakes Which Pupils Make in Spelling." *Journal of Educational Research*, February, 1929.

⁵Foster, W. T. "The Spelling of College Students." *Journal of Educational Psychology*, Vol. II, 1911, pp. 211-215.

⁶McCowen, A. M. *Problems in Training Teachers to Teach Spelling*. Doctor's Thesis, State University of Iowa, June, 1929.

Are Spelling Needs Local?

JOE FARRAR

Principal of Schools, Haynesville, Louisiana

THE IDEA has been prevalent, particularly in the South, that the spelling needs of one section of the country cannot be measured accurately by the needs of any other section. Some educators have felt that the needs were so different that each section should use in its schools a spelling text adapted to its own spelling needs. A study carried on by the writer indicated that this idea was not well founded.

The purpose of this study was to determine through a comparison of words used in personal correspondence whether the spelling needs for children in the South were different from those in other sections of the country. In securing the data for this study, it was the privilege of the writer to have access to material on file in the office of Dr. Ernest Horn of the University of Iowa and to be aided by his counsel and advice. This material, secured and tabulated in a comprehensive study of the adult vocabulary as used in personal correspondence, consisted of an alphabetical list of 861,434 running words, or 19,243 different words, together with their frequencies, which occurred in personal letters gathered from the several sections of the country. In the preparation of these alphabetical lists, the adult writing needs in personal correspondence were analyzed, and the frequency of occurrence of each word was recorded under the section of the country in which it was used. The sections from which this personal correspondence was selected and under which the words were tabulated were as follows: Pacific States, Western States, North Central States, North Eastern States, Middle

Atlantic States, South Central States, and South Atlantic States.

A survey of the words which were used only in the South indicated that there were few of them with a frequency of three or more. There were many with a frequency of only one or two. A frequency of three was set as a lower limit, since a frequency of less than that might be due to chance or other factors, and all words with a frequency of three or more which were used only in the South were tabulated. Forty-two words with a total frequency of 229 were found which were used only in the correspondence of the South. Many of these, though not appearing in this particular form in other sections, were found in some other form and often with a greater frequency. There was one word, *threateningly*, with a frequency of thirteen, found in other forms in other sections; one, *silverware*, with a frequency of ten, not found in any form in other sections; one, *wend*, with a frequency of seven, found in other forms in other sections; six words with a frequency of six, three of which were found in other forms in other sections; seven with a frequency of five, one of which was found in other forms in other sections; three with a frequency of four, two of which were found in other forms in other sections; and twenty-one with a frequency of three, ten of which were found in other forms in other sections.

In an effort to decide which of these 229 words were purely Southern in their use, three adults, who were Southern born and who had traveled widely enough to be familiar with the uses of words in other sections of the country, were asked to go

through the list of words and select those which, in their opinions, were purely Southern in their use. After a careful examination this committee selected the following words: *hellacious*, *malaria*, *scrumdunctious*, and *señor*. *Hellacious* and *scrumdunctious* are colloquial expressions, with variable meanings, used in the South largely for purposes of emphasis. *Malaria* is a disease confined almost entirely to the South and to certain sections of the South, due to the prevalence there of the anopheles mosquito, the carrier of the disease. *Señor* is a Spanish word and is found in the South, both because of the Spanish dialect that still exists in some sections and because of the South's close proximity to Mexico where Spanish is the national language.

The adverb *threateningly* appeared in the correspondence of the South with a frequency of thirteen and did not appear in other sections. *Threaten*, *threatened*, and *threatening* did appear in other sections, however, with a frequency as high as that of *threateningly* in the South. *Silver-ware* appeared ten times in the South and was not found in any other section. The committee, referred to above, were of the opinion that, though this word was in common usage in the South, it could not be classed as strictly Southern. Its absence from the correspondence of other sections can probably be attributed to the element of chance, which is always a factor in a tabulation of this character. These words, though appearing only in the South and appearing there with a rather high frequency, cannot be included in the course of study in the South without crowding out certain marginal words of much greater importance and of equally high frequency. For instance, it would be unwise to crowd out of the course of study in the South a marginal word like *affectionate* with the word *malaria*. *Affectionate* occurred in the correspondence of all sections of the country; it was found in the South with a frequency equal to that of *malaria* and with a total frequency of twenty-three in all sections.

This study continued with a survey of the words which were not used in the personal correspondence of the South, but which were used in other sections of the country. The tabulated words consisted of all those which occurred with a total frequency of ten or more. There were 370 such words. Of these 225 were found in the South in another form. Only 145 words with a frequency of ten or more were not found in some form in the correspondence of the South. Those which were not found in any form in that section were checked by the same committee for the purpose of ascertaining if there were words in this list that were not used in the South. It was the opinion of the committee that of the 370 words not found in the personal correspondence of the South, only two were words not common in Southern usage. Those words were *'neckerchief* and *sleigh*.

'Neckerchief is a colloquial word found predominantly in the West. It was not recorded in the correspondence of any other section. The South does not use the word *sleigh* because of the absence of snow and ice during the winter months. (Should our winters continue as cold as the one we have just experienced, the word *sleigh* should come into common usage in the South.)

A further survey of these words was made to find those which occurred with a high frequency in the personal correspondence of the South but with a relatively low frequency in the correspondence of other sections of the country. Of all running words tabulated in the original investigation, 20.6% of the total frequencies were present in the correspondence of the South. It would be remembered that slight variations, up or down, from this per cent might be caused by factors other than that of common usage. It was necessary, therefore, to set a limit of frequency, and all words with a total frequency of ten or more, where 40% of this total frequency occurred in the correspondence of the South, were tabulated. There were 166 words. It should be noted here that, though these

words had a comparatively high frequency in the South, they had a rather wide distribution and a sufficiently high total frequency to make them valuable for teaching purposes. It should be noted, too, that of the 166 words, 40% of whose total frequency was found in the South, 60% of them were found in other forms in other sections with even a higher frequency than in the South. Six of them were contractions, five of which are not permissible according to best usage but are rather widely used in friendly letters. Three of these words, *French*, *Latin*, and *Spanish* were proper names. It is probable that the following words which appear in this list of 166 have a much greater usage in personal correspondence in the South than in other sections: *hospitable*, *mister*, *oven*, *velvety*. They are used in the correspondence of the South with a much higher frequency than in all other sections combined.

However, we cannot justly reach the conclusion that because words are common to only one section, or because their use is predominant in that section they should be in the course of study of that section. Education should fit the child for efficient living in whatever community he finds himself. If we leave out of our course of study words which are common to all sections and substitute for them words of no greater cruciality (importance in business letters, letters of application, etc.) or frequency common to only one section, we are sacrificing national needs to community needs. Though these words, *hospitable*, *mister*, *oven*, and *velvety*, have a rather high frequency in the South only the word *oven* gets into the course of study. To include the others would make it necessary to push out marginal words of a much greater total frequency and of much greater importance, even in the South.

It is apparent, I think, that there are

some words of a low frequency which are so widely distributed that they become valuable for teaching purposes. In fact, distribution is and should be one of the criteria used in selecting words for the course of study. In order to secure such words a tabulation was made of all words whose total frequencies were less than ten, since those with frequencies of more than ten were used in the last tabulation, and which appeared in at least four sections of the country and in the South a minimum of three times. There were 120 such words. Twenty-seven of them are already in the course of study. They are there, not because of their spread, but because of their cruciality, as measured by their difficulty, their use in business letters, and in letters of application. The remaining ninety-three words are not in the course of study and cannot be put in without pushing out other words which are more crucial. Their great distribution makes them more valuable for teaching purposes, but they do not get into the 4,000 most valuable words because there are other words of less spread in personal correspondence but of greater difficulty and more importance in business letters, and letters of application.

It is evident from this study that there are few words in the personal correspondence of the South that are not used in some form in the personal correspondence in other sections. It is evident, too, that there are few words in the personal correspondence of other sections that are not in common usage in the South. If use in personal correspondence is a fair measure of the value of a word for teaching purposes, it is evident from this study that the spelling needs of one section may be rather accurately measured by the spelling needs of any other section. In other words, the difference between sections is so slight as to be of little value for teaching purposes.

Spelling Deficiency in Children of Superior General Ability

MARGARITA McGOVNEY

Assistant Director, Bureau of Research and Guidance, Berkeley, California

DO CHILDREN of superior intelligence have striking difficulties with any of the subjects of the elementary school? Although investigations seem to show that only rarely do children of superior general intelligence have special disabilities in school subjects, the correlations between I. Q. and achievement in different subjects are not uniform, and spelling shows a lower correlation with general ability than does arithmetic or reading. We would therefore expect a greater number of superior children to exhibit 'disability in this subject than in arithmetic or reading. This situation was a subject of investigation at the State University of Iowa.

Test records of the Elementary School of the State University of Iowa seemed to indicate that a number of children of superior intelligence were poor spellers. Scores on review tests based on the HORN-ASHBAUGH SPELLER were taken as one measure of spelling ability. These records were investigated for October, 1926, January, 1927, May, 1927, October, 1927, and February, 1928. If, on these tests, the pupil consistently ranked in the lower quartile of his class, he was considered a poor speller. The investigators selected fourteen children who had low spelling records and who were also considered by their teachers to be poor spellers. The range of intelligence quotients in this group, as measured by the Stanford-Binet, was from 111 to 126. The median I. Q. was 118.

The next step was to discover or construct tests which would measure the fac-

tors contributing to poor spelling. Low intelligence as a casual factor had been eliminated by selecting only those children with an I. Q. of 110 or over. The school nurse testified that there were no visual or auditory defects in the children selected. It was unnecessary to retest the reading and writing abilities of the pupils since they had recently been tested for school purposes. The Gates Silent Reading Tests and the Stanford Reading Examination had been given. The quality of handwriting had been compared with the Ayres Handwriting Scale and the speed of writing had also been recorded.

To reveal possible causes of poor spelling a number of tests were finally selected. Standard tests were employed wherever available, since they furnished data for comparison. Gates' Test of Phonetic Abilities was chosen to determine the pupil's ability to give a phonic translation of printed forms. A number of tests devised by Gates to measure visual perception were utilized. These measured the ability to distinguish small differences in figures, digits, and words. A test in selection of a figure from a group of figures, one of which is a duplicate of the original, and a test in selecting a certain word from similar spellings were also given. Visual analysis and recognition were measured by Gates' tests.

Three tests to determine the ability of the subject to recognize correct and incorrect spellings were constructed in collaboration with Miss Palmer.¹ An attempt was

¹See Miss Palmer's article, page 149.

made to construct the tests from words commonly misspelled by children. A hundred words, commonly misspelled and ranging in difficulty from third to sixth grade, were presented to the child with their frequent misspellings. From five possible choices in each case he was asked to select and underline the correct spelling. The score was the number of words correctly underlined. Two letters were also written using these commonly misspelled words. The words in the first letter were third and fourth grade misspellings. Those in the second letter were sixth grade errors. The score was the number of misspelled words underlined minus the number of correct spellings underlined.

An attempt was made to measure visual memory for symbols and words. Dr. Gates' Visual Memory for Symbols Test was used. It was constructed on the same principle as the Stanford-Binet Memory for Digits Test. A test constructed with Miss Palmer was given in an attempt to measure memory for words. Auditory memory for digits and words was measured according to the Stanford-Binet technique. The digits and words for which Dr. Gates has established norms, were used.

The ability to associate meaning with symbols is involved in spelling. Some unique tests devised by Dr. Gates to measure this capacity were given in the hope that some striking differences would be uncovered. The first test measured ability to associate a picture of a common article with a simple figure. In the second the figures to be associated are a little more intricate. In the third the child must associate the picture with word-like symbols.

A close examination of the fourteen case studies made reveals the fact that the poor spellers failed rather consistently on certain tests. Six out of the fourteen were poor writers. Six were poor at giving phonetic sounds for letters. Seven scored low on perception of digits and seven on perception of words. Eight of the fourteen were very poor at analysis and recognition of

word-like characters. Ten of the fourteen scored low on visual memory for symbols. Two had difficulty in associating pictures with visually presented word-like characters. Six experienced trouble in associating the spoken word with word-like characters.

Results of the test for Visual Analysis and Recognition of Word-like Characters and the test for Visual Memory for Symbols are especially significant. Of the fourteen children studied every one except Case L made a very poor score on one or the other of these tests or on both of them. The abilities to perceive small differences between pairs of words and to associate the spoken word with word-like characters also appear important.

The poor spellers' performance in these tests was then compared with the performances of the good spellers studied by Miss Palmer. Fourteen good spellers were selected so that the intelligence of the two groups would be as nearly equal as possible. The good spellers were still somewhat superior in intelligence to the poor—having a median I. Q. of 125 as compared with a median of 118. The number of good spellers taken from each grade corresponded exactly to the number of poor spellers studied in that grade.

The good spellers were superior to the poor spellers in phonic ability. The average score of the poor spellers for reading capital letters was 12.769 seconds which, according to Gates, is an age equivalent of 10.65 years or grade 4.8. The average score of the good spellers was 11.428 seconds or an age score of above 11.5 years and above grade 5.6. On reading small letters the poor spellers averaged 13.307 seconds while the good spellers averaged only 11.571 seconds. This means an age equivalent of 10.65 years and a grade equivalent of 4.8 for the poor spellers and for the good spellers an age score above all the standards given. There is a more marked contrast seen in Test A3, giving sounds for letters. The poor spellers aver-

aged 9.5 years and grade 3.6 while the good spellers averaged above 11.5 years and grade 5.6. In Test A4, giving sounds for syllables, and Test 5A, giving sounds for two syllables, the good spellers were superior, and on the latter test by two years. The three other tests of the series show a slight superiority for the good speller group.

There is a decided difference between the scores of the poor and good spellers in the Visual Perception Tests. The perception of figures showed only a slight superiority for the good spellers. On the digits test the good group was two years ahead of the poor spellers. In perception of words, according to Gates' standards, there was over a three year difference between the groups. In both selection of digits and words the poor spellers were three years behind the good spellers.

There was only a very slight difference in the ability of the two groups to analyse geometrical designs. There was a decided difference in their respective abilities to analyse word-like characters. On the average the good spellers exceeded the poor spellers in this ability by nearly two years.

Since the correlation between recall and recognition spelling appears to be high the scores on the next three tests would be expected to be much higher for the good spellers than for the poor. The average good speller recognized as correctly spelled eighty-two words out of a hundred, while the average poor speller recognized only fifty-nine. In the first letter test the good spellers picked out fifty-nine of the incorrectly spelled words while the poor spellers saw only thirty-nine errors. On the second letter test the former discovered thirty-three misspelled words while the latter found only seventeen.

The visual memory for symbols of the good spellers was decidedly better than that of the poor spellers. The good spellers were also better on the test for visual memory of words.

On the average there was not much difference in auditory memory between the

two groups. The good spellers were a little better at remembering digits while the poor spellers were slightly better at words.

The good spellers showed a slight but consistent superiority in the ability to associate meaning with symbols. The association test in which the good spellers had a decided advantage was that of associating spoken words with word-like symbols.

The most significant differences in the performance of the two groups were in the ability (1) to give sounds for letters, (2) to give sounds for two syllables, (3) to perceive small differences in words, (4) to select words from among similar spellings, (5) to select digits, and (6) to analyse word-like characters. On these tests the good spellers showed a superiority of two to three years according to the standards published by Gates.

In conclusion it may be said that occasionally superior children are found who have difficulty with some part of the elementary school curriculum. Fourteen children of superior intelligence were found in grades three, four, five and six of the University of Iowa Elementary School who were poor spellers as shown by their records and by their teachers' opinions of their work. These children rather consistently fell below standard in certain abilities: writing, giving phonetic sounds for letters, perceiving small differences between words, analyzing and recognizing word-like characters, remembering visual symbols and associating the spoken word with printed word-like characters. On some of the above tests the good spellers surpassed the poor by two or three years: (1) giving phonetic sounds for letters, (2) perceiving small differences in words, (3) analyzing word-like characters, and (4) associating the spoken word with the word-like symbols. Apparently the worst possible combination of difficulties would be these four occurring together. Only one child, Case B, was very poor at all four of these tests. He was diagnosed as a mild case of dyslexia.

Abilities Possessed by the Good Speller

MARY E. PALMER

Burlington, Iowa

SINCE so little is known about the qualities of the good speller and why it is that he excels in this particular subject, this experiment was made as an attempt to ascertain specific abilities that good spellers in general might possess. If tests of certain abilities were given to children who were known to be poor spellers, as in the case of the experiment conducted by Miss McGovney,¹ and these same tests given to children who were known to be good spellers, it was hoped that the results might show what traits were present in the good spellers which were lacking in the poor spellers.

The first step was to decide what traits might be expected to have some effect on spelling ability. The following qualities were listed: general mental ability, general physical condition, absence or presence of speech or sensory defects, reading ability, writing ability, phonetic ability, ability to perceive words, ability to associate meanings with symbols, ability to analyze and recognize words, and visual and auditory memory.

The next step was to select or construct tests which would measure these traits. To determine general mental ability the intelligence quotient as found by the Stanford-Binet Test was used. The general physical condition and presence or absence of speech or sensory defects were found from the records of the school nurse at the University Elementary School at the State University of Iowa, where this experiment was conducted. The standing of each child in reading, writing and arithmetic was in-

vestigated, as shown by the results of the standardized tests given the preceding autumn at the University Elementary School.

For the actual testing program several of the tests devised by Arthur I. Gates, which are explained and illustrated in his book on *THE IMPROVEMENT OF READING*² were used. In addition, four tests were constructed, three of which tested the ability of the pupils to recognize correct and incorrect spellings. One of these was a series of one hundred words commonly misspelled, the pupil being expected to choose and underline the correct spelling of the word from among five alternatives. The other two were proof-reading tests, written in the form of letters, using many commonly misspelled words. The words and misspellings used in making out the tests were taken from the list of commonest misspellings in third and fourth grades as compiled by Miss Bugbee³ and those most commonly misspelled in the sixth grade as determined by L. D. Morgan.⁴ Only the misspellings with high frequencies were used. The fourth of the tests was designed to measure visual memory for words. There are no standards by grades determined for these tests, of course, as they were not given to enough children to make standardization possible.

The tests devised by Dr. Gates were employed to measure phonetic abilities, when either the visual or auditory stimulus is used, to measure visual perception of

²Gates, Arthur, *THE IMPROVEMENT OF READING*, Macmillan, 1927.

³Bugbee, E. S., *The Influence of Phonics on Spelling*, M. A. Thesis, State University of Iowa, 1928.

⁴Morgan, L. D. Unpublished manuscript.

¹M. McGovney, M. A. Thesis, State University of Iowa. *Case Studies of Superior Children Who Exhibit a Deficiency in Some Elementary School Subjects.*

geometrical designs, digits, and words, and selection of geometrical figures and words. To measure ability in visual analysis and recognition the three tests for recognizing misspellings, which are described above, were used, together with two tests devised by Dr. Gates for recognizing geometrical designs and word-like characters. Dr. Gates' tests for visual memory span, auditory memory span, and associative learning, both visual-visual and auditory-visual, were used. A detailed description of these tests, telling how they were constructed and how they should be administered, together with the tables used for translating the raw scores into age and grade scores can be found in Dr. Gates' book on *THE IMPROVEMENT OF READING*.

The children used in this experiment were pupils in the University Elementary School, in grades three, four, five and six. The children were selected on the basis of the results of the pre-tests and achievement tests given in spelling over words from the *HORN-ASHBAUGH SPELLER*. No child was used whose score fell below 94 out of a possible 100 on the achievement test, although their scores on the pre-test naturally ran somewhat lower. The teacher's estimate of the child's ability to spell was also secured, and in all but five cases these children were excused from daily and weekly spelling classes because of their scores made on the mid-year test. The final experimental group consisted of twenty children, six from grade three, four from grade four, five from grade five, and five from grade six. The intelligence quotients of the children ranged from 101 to 150 with an average intelligence of 125.92. The chronological ages at the time the testing was begun (February, 1928) ranged from seven years and seven months to twelve years and four months. There were thirteen girls and seven boys in this group of children of superior spelling ability.

It was impossible to treat the results of this investigation statistically, because the number of cases was too small and the

ages and intelligence of the children too variable to have measures of central tendency or coefficients of correlation between the tests which would be reliable. In the case of Dr. Gates' tests, however, by translating the raw scores into age scores it was possible to discover what children were above or below their chronological age in the various tests and to compare these results with those of the poor spellers studied in the investigation conducted by Miss McGovney. The general intelligence of the two groups, as measured by the Stanford-Binet Intelligence Test, shows the good spellers to have an average intelligence of 125.92, while the poor spellers have an average intelligence of 118.21. The children in both groups were selected from the same four grades in the University Elementary School. Lack of space prevents a detailed comparison of the results here, but the good spellers were found to be noticeably superior to the poor spellers in tests of phonetic abilities, visual perception and associative learning, while the difference between the two groups in the tests of visual analysis and recognition, and visual and auditory memory span is too slight to be of any significance.

As the four tests constructed by the investigators were not standardized, it was impossible to make comparisons between the groups which would be really reliable. However, the averages of the two groups were so strikingly different that they seem to indicate at least the general superiority of the good spellers over the poor spellers. On the first letter, or proof-reading test, (third and fourth grade difficulty) on which the highest possible score was 75, the good spellers made an average of 59.14, with a range of 41 to 74. The average of the poor spellers on this test was 39.14 with a range of 9 to 68. On the second letter test (sixth grade difficulty) on which the highest possible score was 50, the average of the good spellers was 34, with a range of 20 to 44, while that of the poor spellers

(Continued on page 160)

Nature Books for Vacation Days

LOUISE SINGLEY

Director of Work with Children, Public Library, Kalamazoo, Michigan

Auspices A. L. A. Book Evaluation Committee

SOME books put things into your head with a sort of rush. . . . I'll take seeds and cuttings and off-shoots from our garden and set them in waste places and hedges and fields and I'll make an earthly Paradise of Mary's Meadow."

In Mrs. Ewing's charming story of MARY'S MEADOW the fascination of creating a garden for the enjoyment of all, and its effect on the child mind is pictured most vividly and beautifully. Ostensibly the unusual children of this story were stimulated by the reading of the GARDEN OF PLEASANT FLOWERS, "Collected by John Parkinson, Apothecary of London and the King's Herbarist, 1629," which they happened upon while exploring their library. Mrs. Ewing's story, so vivid and full of incident, emphasizing, as it does, the intense interest and charm of making a garden out of "waste places" would create in any child an enthusiasm for a garden of his own. For "a garden is a lovable thing," even to the smallest child, and his interest can very easily be stimulated and led. In all of her stories, filled with humorous situations, Mrs. Ewing portrays her delight in flowers, birds, and animals, and although quite English in tone, their freshness and originality is unique and is to be treasured for our American children.

In thinking over the many modern methods of stimulating interest in the out-of-doors, nothing seems to me to equal, in forceful appeal, the picture of the young peasant lad, Jean Henri Fabre. At six he asserted "I will find out. . . ." He delighted as a little boy in serving as a duck-herd in order to explore the wonders of the pond where the baby ducks revelled. He

filled his pockets with the treasures from the pond, lovely snail shells, insects, and other things, only to be severely reprimanded by his parents, who demanded that the pockets be emptied on the spot. He persisted in this interest despite the unsympathetic attitude of the grown-ups about him. Of his early school he says, "It was at once a school, a kitchen, a bedroom, a dining-room, and at times a chicken house and a piggery." This latter diversion of having the pigs and chickens wander in and out promiscuously was hugely welcomed by him and his companions. The fact that the schoolmaster might be interrupted at any moment, since his duties included, besides teaching the children, serving as the village master barber, choir singer, bell ringer, and clock winder, also helped dispel any monotony in lessons. Fabre studied his A-B-C book chiefly to examine closely the pictures of the pigeons. See Fabre's INSECT ADVENTURES, Chapter XVII and Wade's THE BOY WHO FOUND OUT.

These pictures, I say, either of real or imaginary children revelling in the delights of the natural world, if told to young people, are bound to strike a sympathetic interest. On this one may build and help develop a pleasure for all the future years. In the same way one may use successfully the fascinating imaginative nature story founded on the childish impressions and adventures of the great naturalist, William Henry Hudson, THE LITTLE BOY LOST. Another book, recently published, by Waldemar Bonsels, THE ADVENTURES OF MARIO, tells an interesting tale of a boy who runs away from home and lives in the forest after the death of his mother. Cared

for by an old herb-woman, he becomes absorbed in the wild things of nature and is lord of the forest. This incidentally contains many beautiful descriptions.

There are so many fine nature books now printed for children, that it is rather difficult to do more than indicate the tendencies and mention a few published in the various fields. The young child who is fortunate enough to create a garden, however small, will enjoy Frances Duncan's *WHEN MOTHER LETS US GARDEN*. This gives good information in simple words about soil culture, proper tools, planting schedules, and has clear illustrations, plus amusing rhymes to help one remember essentials. For the child a bit older, Helen P. Wodell's *BEGINNING TO GARDEN*, with its excellent emphasis on the necessity for proper soil and good tools, and with good hints as to planting will be found very interesting. Line drawings and diagrams and good photographs add to its helpfulness. For older boys and girls, Verrill's *HARPER'S BOOK FOR YOUNG GARDENERS* gives more detailed information. A recent book, Caroline B. King's *ROSEMARY MAKES A GARDEN*, gives information about rock gardens, bird houses, window boxes, etc., in the form of a story.

For the fortunate young child who will be in the country during vacation days and whose curiosity will be aroused by many things, Edith M. Patch's *HOLIDAY POND*, *HOLIDAY MEADOW*, and *FIRST LESSONS IN NATURE STUDY* would make delightful gifts. These are all excellent and present in a very lively narrative style the basic information about insects, birds, and flowers. *HOLIDAY POND* is devoted to the inhabitants of a little lake, and the insects, flowers, butterflies, and birds that hover near and on it. *HOLIDAY MEADOW*, just recently published, tells charming stories of insects and flowers for the little child. *FIRST LESSONS IN NATURE STUDY* gives information about plants and animals of both city and country. In all cases excellent photographs and decorations go with the text, and the

general format is attractive. Margaret Morley's *LITTLE WANDERERS* also tells very simply the method of seed distribution and dispersal.

Bertelli's *THE PRINCE AND HIS ANTS* is a unique classic—an outstanding example of combining a charming imaginative story with scientific facts. In this story a little Italian boy, Gigino, is changed into an ant and observes the habits of ants, bees, and wasps. The author has truly succeeded in doing what he states in the preface as his object: "I have tried, little children, to have you see great things in little creatures, and when you are grown up you will see many little things in great creatures."

I have already mentioned Fabre's *INSECT ADVENTURES*. This, and his others on the *LIFE OF THE CATERPILLAR*, and *THE MASON-BEES*, are for the somewhat older child. Fabre, called the "Homer of insect life," has recorded careful scientific observations in a beautiful literary style. The simple easy narrative carries you with it whether you have had previous knowledge or not. Maeterlinck's *CHILDREN'S LIFE OF THE BEE* is another real classic that should not be missed, both from the standpoint of vivid realistic description and unusual literary quality. Clarence M. Weed's *BUTTERFLIES WORTH KNOWING* and his *INSECT WAYS*, just recently published, give good accurate descriptions in an attractive style. Cheesman's *EVERYDAY DOINGS OF INSECTS*, Comstock's *INSECT LIFE*, and Holland's *BUTTERFLY-BOOK*, are for older children.

In speaking of birds John Burroughs has said, "If I relate the bird in some way to human life, to my own life,—show what it is to me and what it is in the landscape and the season,—then do I give my reader a live bird and not a labeled specimen." This you will find is the keynote of his *WAKE-ROBIN* and *BIRD STORIES*. This same quality is evident in Hudson's *ADVENTURES AMONG BIRDS*. Personal adventures, vividly expressed, are presented in Baynes' *WILD BIRD GUESTS*, and in Ball's *BIRD BIOGRAPHIES*. Accurate guides are found

in Blanchan's *BIRD NEIGHBORS*, Chapman's *BIRD LIFE*, and Mathew's *FIELD BOOK OF WILD BIRDS AND THEIR MUSIC*. For the younger children, delightful accounts are to be found in Patch's *BIRD STORIES* and Miller's *CHILDREN'S BOOK OF BIRDS*. Daglish's *LIFE STORY OF BIRDS*, recently published, tells with lively simplicity the habits of birds in the different seasons. The woodcuts by the author are accurate and good. The Hawksworth books are chiefly helpful for their arrangement month by month. The Burgess books are of value for their help in arousing interest in quite young children. The numerous illustrations in color by Louis A. Fuertes in the Burgess books are unusually fine.

Among the flower books, Mathews' *BOOK OF WILD FLOWERS FOR YOUNG PEOPLE* and Parsons' *HOW TO KNOW THE WILD FLOWERS* are simple to use with children. Blanchan's *NATURE GARDEN* is more complete, but a bit more difficult.

McFarland's *GETTING ACQUAINTED WITH THE TREES* and Mills' *STORY OF A THOUSAND-YEAR PINE* are written in essay form from a pleasure standpoint. They can be used with the older boy and girl to excite interest. Keeler's *OUR NATIVE TREES AND HOW TO IDENTIFY THEM* is a more complete study containing 340 good illustrations.

It was Carlyle who lamented the fact that he had not been taught the wonders of the sky while still young. In interesting young people in the stars we have found *ASTRONOMY FROM A DIPPER*, with its simple drawings and explanations, a good one with which to begin. For the very small children *STAR PEOPLE* is also useful. Later on, the *BOOK OF THE STARS FOR YOUNG PEOPLE*, with its legends, its illustrations from famous paintings, and with technical information, and *EVENINGS WITH THE STARS*, with its mythology and legends combined with the explanations, will hold the attention of the older child.

The strange inhabitants of the sea present many opportunities for happy experi-

ences for the growing child. *ALONG THE SHORE*, published this year, describes shellfish, sponges, and other animals of the tide-pools, and also gives directions for collecting of specimens and making an amateur aquarium. It is in handbook style, but is for the beginner. *LIFE IN THE DEEP SEA*, *STAR-FISH AND HIS RELATIONS*, and the other Duncan booklets are excellent and simply written, with illustrations in color and photographs. Although English in tone, much applies to the American shore. *DWELLERS OF THE SEA AND SHORE* is for the older child. The seashore, the tide-pool, and the open sea are treated at length. *YOUNG FOLKS' BOOK OF FISHES*, which includes many fine illustrations, is most useful. Of recent interest is the story written by the artist member of the Beebe expedition, Wilfrid S. Bronson, entitled *FINGERFINS: A TALE OF SARGASSO FISH*. It is unusual in material, very entertaining, and has illustrations by the author.

For the young child interested in observations of wild animals, *JUST SO STORIES*, *HINDU FABLES*, *BOGA THE ELEPHANT*, *KAROO THE KANGAROO*, and *THE JUNGLE MAN AND HIS ANIMALS* will prove delightful reading. The older child will read with great pleasure J. T., JR., *ALICE IN ELEPHANTLAND*, *ALICE IN JUNGLELAND*, *JIMMIE: THE STORY OF A BLACK BEAR CUB*, *SPRITE: THE STORY OF A RED FOX*, *SQUIRRELS AND OTHER FUR-BEARERS*, *JUNGLE BOOK*, and any of Scoville's, Hawkes', Thompson Seton's, and Mukerji's tales. This reading will lead to the longer accounts of John Muir, William Beebe, John Burroughs, William Henry Hudson, Enos A. Mills, and others.

Some of the more recent books of poetry have devoted much to the outdoor feeling and vacation spirit. One finds delightful poems in Austin's *CHILDREN SING IN THE FAR WEST*, Clarke's *POETRY'S PLEA FOR ANIMALS*, Wilcox's *THE TORCH*, Untermyer's *THIS SINGING WORLD*, and Stevenson's *HOME* BOOK OF VERSE FOR YOUNG FOLKS*.

Books Mentioned in this Article

- Akeley, Delia J. J. T., Jr.: *the Biography of an African Monkey*. Macmillan, \$2.25
- Austin, Mary. *CHILDREN SING IN THE FAR WEST*. Houghton, \$2.00
- Ball, Alice E. *BIRD BIOGRAPHIES*. Dodd, \$5.00
- Baynes, Ernest Harold. *JIMMIE: the Story of a Black Bear Cub*. Macmillan, \$1.60
- Baynes, Ernest Harold. *SPRITE: the Story of a Red Fox*. Macmillan, \$1.75
- Baynes, Ernest Harold. *WILD BIRD GUESTS*. Dutton, \$2.00
- Bertelli, Luigi. *THE PRINCE AND HIS ANTS*. Holt, \$1.50
- Blanchan, Neltje. *BIRD NEIGHBORS*. Garden City Pub. Co., \$1.00; Doubleday, \$4.00
- Blanchan, Neltje. *NATURE'S GARDEN*. Doubleday, \$5.00
- Bonsels, Waldemar. *ADVENTURES OF MARIO*. Boni, \$3.00
- Bradley, Mary Hastings. *ALICE IN ELEPHANTLAND*. Appleton, \$2.50
- Bradley, Mary Hastings. *ALICE IN JUNGLELAND*. Appleton, \$2.00
- Bronson, Wilfred S. *FINGERFINS: a Tale of Sargasso Fish*. Macmillan, \$2.00
- Burroughs, John: *BIRD STORIES FROM BURROUGHS*. Houghton, \$1.75
- Burroughs, John. *WAKE-ROBIN*. Houghton, \$1.75
- Butler, Eva L. *ALONG THE SHORE*. John Day Co., \$1.25
- Chapman, Frank M. *BIRD LIFE*. Appleton, \$4.00
- Cheesman, Evelyn. *EVERYDAY DOINGS OF INSECTS*. McBride, \$2.50
- Clarke, Eliot Channing. *ASTRONOMY FROM A DIPPER*. Houghton, \$1.25
- Clarke, Frances Elizabeth. *POETRY'S PLEA FOR ANIMALS*. Lothrop, \$3.00.
- Comstock, John Henry. *INSECT LIFE*. Appleton, \$4.00
- Crowder, William. *DWELLERS OF THE SEA AND SHORE*. Macmillan, \$2.25
- Daglish, Eric Fitch. *LIFE STORY OF BIRDS*. Wm. Morrow Co., \$3.00
- Dombrowski, Baroness. *BOGA, THE ELEPHANT*. Macmillan, \$2.50
- Duncan, F. Martin. *LIFE IN THE DEEP SEA*. Oxford, \$0.35
- Duncan, F. Martin. *STAR-FISH AND HIS RELATIONS*. Oxford, \$0.35
- Duncan, Frances. *WHEN MOTHER LETS US GARDEN*. Dodd, \$1.00
- Ewing, Juliana H. *MARY'S MEADOW*. Harcourt, \$2.00
- Fabre, Jean Henri. *INSECT ADVENTURES*. Dodd, \$2.50
- Fabre, Jean Henri. *LIFE OF THE CATERPILLAR*. Dodd, \$2.50
- Fabre, Jean Henri. *MASON-BEES*. Dodd, \$2.50
- Holland, William Jacob. *BUTTERFLY BOOK*. Doubleday, \$5.00
- Hudson, William Henry. *ADVENTURES AMONG BIRDS*. Dutton, \$3.00
- Hudson, William Henry. *LITTLE BOY LOST*. Illustrated by Dorothy Lathrop. Knopf, \$4.00
- Johnson, Gaylord. *STAR PEOPLE*. Macmillan, \$1.50
- Keeler, Harriet Louise. *OUR NATIVE TREES AND HOW TO IDENTIFY THEM*. Scribner, \$3.00
- King, Caroline B. *ROSEMARY MAKES A GARDEN*. Penn Pub. Co., \$2.00
- Kipling, Rudyard. *JUNGLE BOOK*. Doubleday, \$2.00
- Kipling, Rudyard. *JUST SO STORIES*. Doubleday, \$2.00
- McFarland, John Horace. *GETTING ACQUAINTED WITH THE TREES*. Macmillan, \$1.75
- Maeterlinck, Maurice. *CHILDREN'S LIFE OF THE BEE*. Dodd, \$2.00
- Mathews, Ferdinand Schuyler. *BOOK OF WILD FLOWERS FOR YOUNG PEOPLE*. Putnam, \$3.00
- Mathews, Ferdinand Schuyler. *FIELD BOOK OF WILD BIRDS AND THEIR MUSIC*. Putnam, \$3.50
- Mellen, Ida. *YOUNG FOLKS' BOOK OF FISHES*. Dodd, \$2.00
- Miller, Olive Thorne. *CHILDREN'S BOOK OF BIRDS*. Houghton, \$3.00
- Mills, Enos A. *STORY OF A 1000-YEAR PINE*. Houghton, \$1.25
- Morley, Margaret. *LITTLE WANDERERS*. Ginn, \$0.72
- Muir, John. *STORY OF MY BOYHOOD AND YOUTH*. Houghton, \$3.25
- Mukerji, Dhan Gopal. *HINDU FABLES*. Dutton, \$2.50
- Olcott, William Tyler. *BOOK OF THE STARS FOR YOUNG PEOPLE*. Putnam, \$3.00
- Parsons, Mrs. William S. Dana. *HOW TO KNOW THE WILD FLOWERS*. Scribner, \$3.00
- Patch, Edith Marion. *BIRD STORIES*. Little, \$1.25
- Patch, Edith Marion. *FIRST LESSONS IN NATURE STUDY*. Macmillan, \$1.50
- Patch, Edith Marion. *HOLIDAY MEADOW*. Macmillan, \$2.00
- Patch, Edith Marion. *HOLIDAY POND*. Macmillan, \$2.00
- Procter, Mary. *EVENINGS WITH THE STARS*. Harper, \$2.50
- Stevenson, Burton E. *HOME BOOK OF VERSE FOR YOUNG FOLKS*. Holt, \$2.75
- Untermeyer, Louis, ed. *THIS SINGING WORLD*. Harcourt, \$3.00
- Verrill, A. Hyatt. *HARPER'S BOOK FOR YOUNG GARDENERS*. Harper, \$2.00
- Wade, Mary Hazelton. *BOY WHO FOUND OUT*. Appleton, \$1.75
- Weed, Clarence M. *BUTTERFLIES WORTH KNOWING*. Doubleday, \$2.00
- Weed, Clarence M. *INSECT WAYS*. Appleton, \$2.50
- Wells, Carveth. *JUNGLE MAN AND HIS ANIMALS*. Duffield, \$2.00
- Wiese, Kurt. *KAROO, THE KANGAROO*. Coward-McCann, \$1.50
- Willcox, Louise Collier, ed. *THE TORCH*. Harper, \$1.75
- Wodell, Helen Page. *BEGINNING TO GARDEN*. Macmillan, \$1.75

Teach-Test-Study Plan in Spelling

CLAUDE ANDERSON PHILLIPS

*Director of Elementary School, University of Missouri
Columbia, Missouri*

NEARLY all of the researches and studies in spelling have been concerned chiefly with the selection of vocabularies and their gradation. Very few studies have been made to determine efficient and economical methods by which pupils may learn to spell. For many years the author has been interested in the development of a suitable technique to insure more satisfactory results in spelling. For the last four years, the problems of method have been studied very critically and a very definite technique of instruction has been worked out. The purpose of this paper is to report some results of the application of this technique which I shall call the teach-test-study method of learning to spell. The method is very positively based on the following fundamental assumptions:

1. Spelling is primarily a matter of habit formation.
2. As such, it is essentially an individual accomplishment for every new word to be learned.
3. One hundred per cent efficiency in spelling for all words is the only goal worth striving for or to be proposed as a standard.

This teach-test-study technique may be stated in a condensed form to include the following major items.

1. With books in hand, all the new words of the lesson are pronounced very carefully by the teacher while the pupils look on. Then the pupils are required to pronounce the words until it is certain that all the members of the class know how to pronounce each word correctly.

2. The next phase of the instruction involves the use of each word in a sentence by the pupils. Obviously, the value of this is to provide an exercise by which the teacher can make sure that the pupils know the proper use of the words.
3. The next step in the teaching consists in the teacher writing each one of the words of the lesson on the board, one word at a time, erasing the old word as each new word is taken up.
4. After this exercise, the pupils are required to try to visualize each word with eyes closed, repeating the letters of the word to themselves quietly.
5. The next feature of the technique is to require the pupils to write each word, studying it carefully as it is written.
6. The final phase of the teaching consists in directing the pupils to look at the word in their books, and to write it, saying the letters in order as the writing is done.

These six steps constitute directed learning and employ the major ways of stimulating the pupil to learn—pronunciation, visualization and motor activity in writing. The technique provides for these stimuli in separate form and in significant combinations. It will be observed that this procedure employs psychological principles that are theoretically sound. Moreover, it precludes the possibility of initial errors, incorrect habits of any kind and guessing.

After the teaching process as outlined above is completed, a written test is taken by the pupils on the words which have been

studied. Some form of tablet should be provided so that the spelling may be kept throughout the year. As soon as the words are dictated, they should be checked by the pupil or the teacher. If all the words are spelled correctly it has been a satisfactory lesson. All the words missed constitute individual problems for the next day's lesson. They should be studied again, using the essential features of the technique.

The general scheme for teaching new words which has been employed in these studies provides that one-half of the words to be studied in a week shall be presented on Monday under the teacher's direction. After the test has been administered, any words missed by a pupil become individual problems for him on Tuesday. The second half of the list of words for the week is taught on Wednesday. The words missed in this lesson become individual problems for those pupils missing them to be learned on Thursday. On Friday, all of the words for the week are reviewed with a final written test at the end of the period to determine the efficiency of the spelling for the week.

A very definite technique for pupils to use in connection with the study of words missed on Monday, Wednesday, and in the review on Friday is based directly on the six items discussed in the teaching technique.

The time allotted for spelling for my studies has been a maximum of fifteen minutes a day or seventy-five minutes a week. As a matter of fact, the average time has been about fifty minutes a week.

During the four years that the writer has been working on this technique it has been tried out in six teacher training institutions, a large number of rural schools and several cities. The following reports are of experiments in the different types of schools indicated.

Rural Schools

In Pettis County, Missouri, all of the spelling tablets were collected from twenty

rural schools. The schools were a random selection. The county superintendent and the teachers had no information that a study was to be made of this problem. At a meeting in August, the county superintendent gave general instructions about the new technique to be employed, but prior to this time none of the teachers knew anything about it. In the rural schools of Missouri children are classified as follows:

A Class—seventh and eighth grades.

B Class—fifth and sixth grades.

C Class—third and fourth grades.

In the A Class, which consisted of ninety-seven pupils, each pupil spelled 800 words, making a total of 77,600 words. The percentage of accuracy was 98+.

In the B Class, consisting of ninety-three pupils, each spelled 640 words, making a total of 5,952 words. The percentage of accuracy was 98+.

In the C Class, sixty-seven pupils each spelled 480 words, making a total of 32,160 words. The percentage of accuracy was 96+.

These results are based on the review lessons which were written each Friday. The pupils were not scientifically classified, and obviously the presence of two grades in each class would tend to reduce the accuracy of the groups. In fact a recent study of a similar situation gave results in which the higher class made almost perfect scores. These rural schools were taught for a term of eight months. The teachers were a non-selected group. A number of them were beginners and no one of them had to her credit more than sixty semester hours of college work.

City Schools

In the second semester of last year, a highly trained teacher tried out the teach-test-study technique for four weeks in her own room in Tulsa, Oklahoma. Her room had two sections in it—a 6-B grade of twenty-seven pupils and a 5-A of thirty-two pupils—a total of fifty-nine pupils. Grade 6-B had a range in intelligence quo-

tient from 75 to 95, which is a low group. This group spelled a total of 2,160 words with an efficiency of 96.2 per cent. Section 5-A had a range in intelligence quotient from 100 to 120; this is a high group. This group spelled a total of 2,560 words with an efficiency of 98.5 per cent. In this case the teacher did not know anything about the technique until she started to prepare for the experiment. The results are based on the review lessons which were taken on Friday.

Teacher-Training Institutions

The elementary school in Missouri University is organized with two or more groups in each room. The upper room, which is taught by a well trained but not an experienced teacher, secured almost ideal results. For purposes of differentiation, although it is not quite accurate, I will call these two grades five and six.

Grade five includes thirteen pupils. Twenty new words were spelled each week by this group for fourteen weeks. During the semester six pupils missed the Friday tests through absence. Therefore, the total number of words written by this group was 3,520. The group made a percentage of 97.44. Eleven of the thirteen pupils are

normally fifth grade students as measured by the W-Form of the new Stanford Achievement Test as of January, 1930. These eleven pupils spelled 98.02 per cent of the words correctly.

The sixth grade includes sixteen pupils. For thirteen weeks they spelled a total of 260 words each week. There were 4,160 new words written on the Friday review tests with a percentage of accuracy of 98.64. In this group there were twelve pupils who measured by the new Stanford Achievement Test Form-W as of January, 1930, were of sixth grade standing. These twelve pupils spelled 3,120 new words with an accuracy of 99.55 per cent. Four of the twelve had a perfect score for the semester and six missed only one word. In this study, every effort was made to make sure that the pupils followed the technique carefully with absolutely no possibility of co-operation on the tests which were administered each Friday.

To be sure, it could not be said that these reports are absolutely conclusive evidence that this technique is the final solution for all spelling difficulties. But certainly these results and others which might be presented do constitute valid evidence that the technique will give a very high degree of efficiency when it is employed faithfully.

AN OMISSION

The article on page 151 of this issue, "Nature Books for Vacation Days," by Louise Singley, is seventh in a series published under the direction of Miss Elizabeth

D. Briggs, Acting Chairman of the Book Evaluation Committee of the Section of Library Work With Children of the American Library Association.

Editorials

The Old Problem

THE investigations of Miss McGovney, reported on page 146, and of Miss Palmer, on page 149, should have valuable results in remedying the ailments of poor spellers. The two problems—why do some bright children spell poorly? and what does make a good speller?—have been approached in a scientific manner. The conclusions derived from these two investigations are the same, that the poor spellers among intelligent children are deficient in certain mechanical abilities such as perceiving small differences in words, and associating the spoken word with word-like characters.

Spelling, as these two investigations show, is almost purely a matter of mechanical skills. As Dr. Horn pointed out in an article in the March number of *The Review*, the spelling of English words is thoroughly illogical. The very thoughtful child, the child who has the ability to analyze and to reason, may, perhaps, be expected to have certain difficulty with spelling.

Miss Palmer questions whether the abilities necessary in spelling can be *taught*. Perhaps not. But since these are mechanical skills, they may, perhaps, be cultivated and so established much as habits are established.

Indeed, habit formation in spelling, in grammar, in punctuation, dreary though it may appear, is no small part of the English teacher's work.

Inert Conservatism

SEVERAL months ago, *The Review* pointed out, editorially, that fad-hunters and phrase-mongers cheapened many valuable educational experiments by making extravagant claims for them. The educational faddist and the phrase-monger, however, are not the only enemies of educational progress. The inert conservative, the person who regards everything new with disfavor, is equally a barrier to the attainment of educational ideals.

Let it be understood, just here, that the real conservative, the person who examines new values thoughtfully, is closely akin to the real progressive. They—the liberal conservative and the judicious progressive—are the real supporters of educational progress. We are not discussing either of them here. We are only concerned with the teacher who stubbornly continues in worn paths, refusing to consider any change.

Too often, the explanation of this attitude is sheer indolence and indifference to the demands of the teaching profession. The old way is always easier for this type of teacher. Whether it is better for the children does not concern the inert conservative.

Such an attitude in business would quickly bring disaster if persisted in. In other professions, too, this stubborn immobility would be met with loss of confidence. Who would consult an architect who persisted in using the designs of the 1880's? What surgeon today would dare continue the use of the crude instruments of Lister?

Reviews and Abstracts

ASSEMBLY PROGRAMS. By M. Channing Wagner.
A. S. Barnes, 1930.

This book is a convenient handbook to "assembly committees" or principals who are seeking the whys and hows of assemblies. It brings together opinions of authorities in the field of extra-curricular and curricular activities, sets up objectives and principles underlying assembly programs and gives illustrative single and yearly programs from representative schools throughout the country. Of the seventeen objectives the author and his summer school students at Teachers College, Columbia University, worked out perhaps the most stimulating are:

- (a) To explore the work of various departments
- (b) To vitalize classroom activities
- (c) To furnish a reasonable amount of entertainment
- (d) To work always toward unification
- (e) To arrange for the desirable educative contact with life outside the school
- (f) To have all that comes before the assembly be a genuine, continuously developing expression of the life of the students, by the students, for their school.

These are sufficiently illustrated in the specimen programs that a beginner or experienced assembly program maker would see how to survey his own assemblies with these objectives as criteria of worth.

Angela M. Broening.

HOW TO TEACH SPELLING. By Frederick S. Breed.
F. A. Owen Publishing Co., 1930.

For a book to appear in 1930 on "How to Teach Spelling" is challenge to any reviewer. What is there to be said or written on this subject that is not already accessible in the well-written books and articles in this field? Breed has found something that justifies his publication not only to his publisher but to teachers and supervisors of English who are continuously seeking adequate solutions of the problems of what to teach, how to teach, and how to measure the outcomes of teaching. He presents in a readable form selected data from research studies and the opinions of experts on these items: "Selecting the Words to be Taught, The Curriculum and the

Child, The Gradation of Words, Organization of Lesson Units, Directing Study Activities, Handling Cases of Spelling Disability, Measuring the Results of Instruction, A Spelling Vocabulary for Elementary Schools." The carefully selected bibliography and analytical table of contents and index make the book not only good in itself but also excellent as a key to the entire subject.

Angela M. Broening.

CREATIVE POWER. By Hughes Mearns. Doubleday, Doran, 1929. 396 pp.

When Mr. Mearns talks about his philosophy of "Creative Power" he wins his audience to his point of view by a prefatory statement that he is not telling the whole truth of educating boys and girls but only that phase of it which interests him especially and in which his success earns apostles to his creed.

This book, more than most books, preserves the flavor of a direct contact with the author. In his autobiographical style, Mearns weaves the threads of human thought and feelings expressed by the boys and girls whose poetry and prose he quotes. The book is delightful reading and convincing to those of us who have, likewise, set up an educative environment which releases in boys and girls creative reading and writing.

Angela M. Broening.

ESSENTIAL LANGUAGE HABITS. By W. W. Charters, Esther M. Cowan, and Annette Betz. Books one, two, and three. Silver, Burdett, 1923, 1929.

Continuing the review from the March number, the last two books of the series present an attractive appearance in type, leading and margins. The work of each grade (Book Two for the sixth and seventh and Book Three for the eighth and ninth) opens with a series of tests based on lessons of the preceding year and closes with another on the work just completed. This is an excellent way to show the child exactly wherein his weakness lies.

In the second volume the authors have made a happy choice of stimulation material for such worth-while activities as planning a child's budget, making and acknowledging an introduction, giving directions, visiting a circus, debating, and studying poems.

The books of this series are an outgrowth of the scientific work done by Dr. Charters toward the discovery of language errors in children's speech for use as a basis in remedial instruction.

Ina H. Hill.

THE ADVENTURES OF MARIO. By Waldemar Bonsels. Translated by Whittaker Chambers. Illustrated by Kurt Wiese. Albert and Charles Boni, 1930.

That the present book should have a strong Oriental cast will not surprise those who have read Bonsel's *AN INDIAN JOURNEY*. The book is similar to Mukerji's stories of the jungle both in theme and feeling. The setting is different, of course, for Mario's story centers in a German forest.

Twelve-year-old Mario, stricken with grief at the death of his mother, plunges into the deep forest. Here he comes upon old Dommelfei, the

herb-woman, and under her tutelage he learns not only the ways of forest-dwellers, but that "he effected nothing important, attained nothing pleasing or sensible unless he fore-armed himself with patience. Yes, patience, that above all was what the forest demanded of one!"

The theme of this story—wringing a living from the wilderness—is a popular one with children. The style has dignity and charm, preserved in a sympathetic translation. The somewhat slow pace of the story, however, the rather liberal larding with philosophy, and the occasional thoroughness with which the author discusses certain topics, as for example, varieties of edible mushrooms, make it hard to say whether *THE ADVENTURES OF MARIO* will be popular with children. Precocious children in the upper grades may like it.

J. M.



ABILITIES POSSESSED BY A GOOD SPELLER

(Continued from page 150)

was only 17.85, with a range of 4 to 31.

On the test of 100 words with their commonest misspellings, the average of the good spellers was 80.95 with a range of 60 to 96. The average of the poor spellers was 59.3, with a range of 38 to 80. On the test of visual memory span, on which the highest possible score was 100, the average of the good spellers was 69.45, with a range of 30 to 100, while the average of the poor spellers was 50.78, with a range of 24 to 65.

To summarize the results, then, it was found, in comparing this experimental group of twenty good spellers with a group of fourteen poor spellers, who are slightly inferior in general intelligence, and are similar in chronological age and school environment, the good spellers excel the poor spellers in tests of phonetic abilities, visual perception and associative learning. There was no noticeable difference between the performance of the two groups in the tests of visual analysis and recognition, or visual and auditory memory span.

The group of twenty good spellers is above the average of the public schools in general in regard to physical condition,

although the children are probably not above the average for the school which they attend. The majority of this group of good spellers are above the class median in achievement in reading, writing and arithmetic, with the exception of speed of oral reading. Fourteen of the group (nearly three-fourths) are classified by their teachers as A or A— students.

How valuable these tests or similar ones might be when used for diagnostic purposes within the school system is a problem which requires much more extensive investigation. The relationship which seems to exist between the ability to spell and the ability to perceive visually small differences, the ability to associate meanings with symbols, and certain phonetic abilities, causes the investigator to inquire to what extent these latter abilities might be developed. Children can certainly be taught in such a way as to develop phonetic abilities, but whether abilities of visual perception and associative meaning are traits which can be acquired or not is a question which can be settled only by further experimentation.